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1 ABSTRACT OF THE DISCLOSURE

2 An ultrasound imaging method and system configured to simultaneously acquire and process
3 multi-mode and multi-band echo information from a single set of pulse firings. Raw ultrasound
4 signals are digitized and stored in an I/Q data buffer. The stored data are then parallel
5 preprocessed as a function of frequency band or alternative encoding. Parallel preprocessing
6 optionally includes manipulating the data in respect to different imaging modes. Outputs of the
7 parallel preprocessors are coupled to separate echo formers used to simultaneously reconstruct
8 various desired echo information to form a multi-mode or multi-band image. The echo
9 formation process is optionally preformed in parallel.

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